

In the tropical regions of the Pacific Ocean the typhoon season of 1909 has been unusually free from severe storms. On October 24, however, a typhoon that crossed northern Luzon is reported to have been attended by a rainfall of 18 inches in 9 hours and 26 inches in 24 hours and by a wind velocity of 95 miles an hour, that was measured before the wind gage was blown away.

*Average temperatures and departures from the normal.*

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
New England.....	12	49.9	- 0.5	+ 2.1	+ 0.2
Middle Atlantic.....	16	52.8	- 3.0	+ 4.5	+ 0.4
South Atlantic.....	10	61.9	- 1.7	+ 8.2	+ 0.3
Florida Peninsula*.....	8	73.0	- 0.2	+ 15.7	+ 1.6
East Gulf.....	11	66.0	+ 4.4	+ 14.8	+ 1.5
West Gulf.....	10	68.3	+ 1.9	+ 17.3	+ 1.7
Ohio Valley and Tennessee.....	13	54.3	- 2.7	+ 3.1	+ 0.3
Lower Lakes.....	10	47.7	- 3.9	- 3.7	- 0.4
Upper Lakes.....	12	45.6	- 2.0	+ 4.1	+ 0.4
North Dakota*.....	9	42.6	- 0.8	+ 0.2	0.0
Upper Mississippi Valley.....	14	50.8	- 2.0	+ 3.0	+ 0.3
Missouri Valley.....	12	53.4	+ 0.7	+ 8.5	+ 0.8
Northern slope.....	9	46.5	+ 1.8	+ 0.4	0.0
Middle slope.....	6	56.3	+ 0.7	+ 7.9	+ 0.8
Southern slope*.....	7	62.7	+ 0.3	+ 12.9	+ 1.3
Southern Plateau*.....	10	59.5	+ 0.4	- 4.5	0.0
Middle Plateau*.....	11	50.1	+ 1.2	+ 4.5	0.0
Northern Plateau*.....	11	48.8	+ 0.8	- 1.8	- 0.2
North Pacific.....	7	51.7	+ 0.7	- 8.6	- 0.9
Middle Pacific.....	5	59.5	- 0.1	- 2.0	- 0.3
South Pacific.....	4	54.1	+ 1.8	+ 0.2	+ 0.2

\*Regular Weather Bureau and selected cooperative stations.

*Average cloudiness and departures from the normal.*

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	5.3	- 0.1	Missouri Valley.....	4.3	+ 0.2
Middle Atlantic.....	4.2	- 0.6	Northern slope.....	4.6	+ 0.2
South Atlantic.....	2.6	- 1.4	Middle slope.....	3.8	+ 0.4
Florida Peninsula.....	5.7	+ 1.0	Southern slope.....	2.8	- 1.8
East Gulf.....	2.4	- 1.5	Southern Plateau.....	1.3	- 0.9
West Gulf.....	2.4	- 1.3	Middle Plateau.....	3.4	+ 0.1
Ohio Valley and Tennessee.....	3.8	- 0.6	Northern Plateau.....	5.2	+ 0.6
Lower Lakes.....	6.0	+ 0.1	North Pacific.....	6.8	+ 0.5
Upper Lakes.....	6.3	+ 0.3	Middle Pacific.....	5.0	+ 1.2
North Dakota.....	5.5	+ 0.3	South Pacific.....	3.1	0.0
Upper Mississippi Valley.....	4.7	+ 0.1			

*Average relative humidity and departures from the normal.*

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	73	- 6	Missouri Valley.....	64	- 1 3
Middle Atlantic.....	70	- 9	Northern slope.....	62	- 1 2
South Atlantic.....	72	- 6	Middle slope.....	61	- 1 2
Florida Peninsula.....	77	- 4	Southern slope.....	58	- 1 5
East Gulf.....	71	- 1	Southern Plateau.....	45	0
West Gulf.....	69	- 3	Middle Plateau.....	48	- 1
Ohio Valley and Tennessee.....	69	- 2	Northern Plateau.....	50	- 4
Lower Lakes.....	71	- 1	North Pacific.....	86	+ 6
Upper Lakes.....	78	0	Middle Pacific.....	72	+ 2
North Dakota.....	75	+ 3	South Pacific.....	66	- 4
Upper Mississippi Valley.....	71	0			

**RIVERS AND FLOODS.**

River matters were quiet and uneventful during the month, and the usual seasonal low water stages prevailed in all the rivers. There was a moderate rise in the lower portions of the Texas rivers toward the close of the second decade of the month, but it was not sufficient to cause any apprehension.

Hydrographs for typical points on several principal rivers are

*Average precipitation and departures from the normal.*

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
New England.....	11	1.70	47	- 1.9	- 1.8
Middle Atlantic.....	16	1.44	44	- 1.8	- 1.7
South Atlantic.....	11	1.67	43	- 2.2	- 8.0
Florida Peninsula*.....	8	3.57	76	- 1.1	- 2.5
East Gulf.....	11	2.25	79	- 0.6	+ 6.2
West Gulf.....	10	2.66	96	- 0.1	- 11.2
Ohio Valley and Tennessee.....	13	2.52	98	- 0.1	+ 3.0
Lower Lakes.....	10	1.80	60	- 1.2	+ 1.0
Upper Lakes.....	12	1.52	54	- 1.3	- 1.8
North Dakota*.....	9	0.68	68	- 0.3	- 0.1
Upper Mississippi Valley.....	15	2.51	104	+ 0.1	+ 0.7
Missouri Valley.....	12	1.74	94	- 0.1	+ 2.0
Northern slope.....	9	0.37	38	- 0.6	- 0.1
Middle slope.....	6	1.49	100	0.0	- 1.5
Southern slope*.....	7	1.37	49	- 0.7	- 8.6
Southern Plateau*.....	11	0.06	8	- 0.7	- 0.1
Middle Plateau*.....	10	0.54	57	- 0.4	+ 0.4
Northern Plateau*.....	11	0.92	75	- 0.3	- 0.0
North Pacific.....	7	4.22	102	+ 0.2	- 3.2
Middle Pacific.....	7	1.54	107	+ 0.1	+ 6.0
South Pacific.....	4	0.38	49	- 0.4	+ 4.6

\*Regular Weather Bureau and selected cooperative stations.

*Maximum wind velocities.*

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Amarillo, Tex.	31	58	w.	Minneapolis, Minn.	11	51	nw.
Atlanta, Ga.	14	58	w.	Mount Tamalpais, Cal.	28	52	nw.
Block Island, R. I.	16	50	w.	Do.	29	64	nw.
Do.	29	50	nw.	North Head, Wash.	19	62	s.
Buffalo, N. Y.	12	56	sw.	Do.	20	62	se.
Do.	13	50	sw.	Do.	21	58	se.
Detroit, Mich.	12	50	sw.	Do.	22	58	se.
Do.	21	50	sw.	Do.	29	56	se.
Duluth, Minn.	11	56	dw.	Oklahoma, Okla.	31	52	sw.
Do.	12	58	dw.	St. Paul, Minn.	11	50	nw.
El Paso, Tex.	23	54	ne.	Sioux City, Iowa.	7	50	s.
Galveston, Tex.	31	54	dw.	Tatooosh Island, Wash.	10	50	e.
Key West, Fla.	11	83	ne.				

**RAINFALL IN JAMAICA.**

Through the kindness of Mr. Maxwell Hall, meteorologist to the government of Jamaica and now in charge of the meteorological service of that island, we have received the following data:

*Comparative table of rainfall.*

[Based upon the average stations only.]

OCTOBER, 1909.

Divisions.	Relative area.	Number of stations.	Rainfall.	
			Inches.	Inches.
Northeastern division.....	25	17	13.13	13.89
Northern division.....	23	41	7.88	8.36
West-central division.....	26	20	14.08	13.62
Southern division.....	27	26	12.32	12.14
Means.....	100	.....	11.85	12.00

The rainfall for the Island was therefore the average.

The heaviest rainfall, 31.38, was recorded at Radnor and the smallest, 3.34, was recorded at Sandy Bay.

shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport on the Red.—H. C. Frankenfield, Professor of Meteorology.